Name: Date:

PCW_09_22 Coordinate transformations v11

Question 1

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f[6x+2]}{3} + 4$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(\frac{a-2}{6} \;,\; \frac{b}{3} + 4 \right)$$

Question 2

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f\left[\frac{x}{4} - 3\right]}{9} - 5$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(4\,(a+3) \;,\; \frac{b}{9} - 5 \right)$$

Question 3

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f[6\,(x+4)] - 8}{3}$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(\frac{a}{6} - 4 \;,\; \frac{b-8}{3} \right)$$

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Question 4

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f\left[\frac{x}{9}+4\right]+8}{3}$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \to \left(9\,(a-4)\;,\;\frac{b+8}{3}\right)$$

Question 5

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 5\cdot\left(f\left[\frac{x+9}{2}\right]-8\right)$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \to (2a-9\;,\;5\,(b-8))$$

Question 6

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 5\cdot\left(f\left[\frac{x-6}{8}\right]+2\right)$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \to (8a+6\;,\;5\,(b+2))$$